



I-66 Multimodal Study 4

Inside the Beltway

Identifying solutions between I-495 and the Theodore Roosevelt Bridge

FACT SHEET 4

IN THIS FACT SHEET

From Mobility Options to Multimodal Packages . .	1
Multimodal Packages . . .	2-3
Sensitivity Tests	4
Next Steps	4
Schedule/Key Milestones . .	4
How to Stay Informed and Involved	4

From Mobility Options to Multimodal Packages

Based on the analysis of the eleven Mobility Options, described in Fact Sheet 3, and input from the Participating Agency Representatives Committee (PARC) and stakeholders, four Multimodal Packages have been developed. Each package includes a variety of projects and programs to reduce congestion and improve mobility along the I-66 corridor inside the Beltway, between I-495

and the Theodore Roosevelt Bridge. These four packages are comprised of previously tested Mobility Options with some modifications and enhancements to better meet the needs of the corridor. All packages include integrated corridor management (ICM) solutions, transportation demand management (TDM) programs, and a range of pedestrian and bicycle improvements.

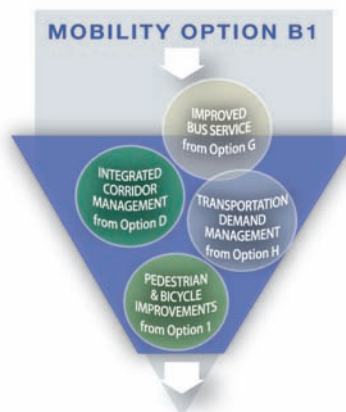
Key Components for Each Multimodal Package:

About the Study

The I-66 Multimodal Study is focused on developing a set of recommendations for multimodal mobility packages which can help reduce congestion and improve mobility along the I-66 corridor inside the Beltway, between I-495 and the Theodore Roosevelt Bridge.

Fact Sheets

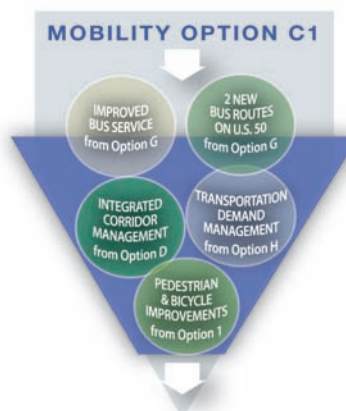
- 1 Study Overview and Outcomes**
- 2 Issues and Needs and Study Process**
- 3 From Issues and Needs to Options**



MULTIMODAL PACKAGE 1
Convert I-66 to a Bus/High Occupancy Vehicle (HOV)/High Occupancy Toll (HOT) Lane System



MULTIMODAL PACKAGE 2
Convert I-66 to a Bus/HOV/HOT Lane System and add a lane in each direction



MULTIMODAL PACKAGE 3
Add an HOV/Bus Lane to I-66 in each direction



MULTIMODAL PACKAGE 4
Enhanced Bus Service, including buses on shoulders along Route 50

Multimodal Packages

The following descriptions of the Multimodal Packages provide suggested applications and key findings. The findings for the packages are compared against the projected mobility and congestion outputs from the 2040 Baseline for this study.



Baseline Assumptions for 2040

The 2040 Baseline for the I-66 Multimodal Study is called the CLRP+ Baseline and is comprised of the 2011 Fiscally-Constrained Long-Range Plan (CLRP) plus the recommended bus services and Transportation Demand Management (TDM) measures from the 2009 I-66 Transit/TDM study. The CLRP is developed cooperatively by governmental bodies and agencies represented on the National Capital Region Transportation Planning Board and identifies all regionally significant transportation projects and programs that are planned and funded in the Washington metropolitan area between 2011 and 2040. Key assumptions included are:

- > I-66 restricted to Bus/HOV 3+ in the peak direction
- > I-66 westbound spot improvements #1, #2, #3
- > Same I-66 HOV hours of operation as today
- > Silver Line Phase I (to Wiehle Avenue) and Silver Line Phase II (to Dulles)
- > New and enhanced Priority Bus services on I-66, U.S. 29, and U.S. 50
- > TDM elements from the I-66 Transit/TDM Study
- > Metrorail core capacity improvements, including 8-car trains

ICM, TDM, and Bicycle/Pedestrian Package Components

Integrated corridor management, transportation demand management, and bicycle/pedestrian solutions will be included in all four of the Multimodal Packages.

Integrated Corridor Management (ICM)

ICM brings together a variety of technology elements, providing drivers, transit users, carpoolers, and bicyclists, with information to be able to make informed transportation decisions in advance or in real time. When ICM elements are implemented, users can expect greater travel time reliability and more efficient use of corridor infrastructure. The I-66 Active Traffic Management (I-66 ATM) project is addressing several such improvements.

Specific elements of ICM considered in the I-66 Multimodal Study include:

- > Enhanced Ramp Metering (I-66 ATM)
- > Dynamic Merge (Junction Control) (I-66 ATM)
- > Enhanced Dynamic Message Signs (I-66 ATM)
- > Continuous Closed-Circuit Television Coverage (I-66 ATM)
- > Speed Harmonization
- > Advanced Parking Management System
- > Multimodal Traveler Information
- > Signal Priority for Transit Vehicles

Transportation Demand Management (TDM)

The following TDM measures, which are strategies and policies used to reduce travel demand, have been chosen for inclusion in the packages. These measures have proven effective for reducing single occupancy travel and person-miles of travel, and complement the corridor enhancements in each Multimodal Package.

Bicycle

- > Bike Hubs/Storage at Priority Bus Activity Nodes
- > Capital Bikeshare Marketing

Employer Outreach

- > Enhanced Corridor Marketing
- > Enhanced Telework! VA
- > Northern Virginia Ongoing Financial Incentive
- > Enhanced Employer Outreach

Technology

- > Online/Mobile Traveler Information Apps

Transit

- > Try Transit and/or Direct Transit Subsidy

Bicycle/Pedestrian

Bicycle and pedestrian improvements are included to support active transportation by bicycling and walking, increasing the potential for shift from motorized modes. Recommendations are primarily sourced from existing plans from Arlington and Fairfax counties, as well as the City of Falls Church.

- > On road bicycle facilities: bike lanes, shared lane markings, signed bike routes, and bike boulevards.
- > Off road improvements: new or improved shared use paths, Metro station access improvements, and trail / road intersection safety improvements.
- > Spot improvements: intersection crossing improvements.
- > End of trip improvements: bike parking at county facilities, commercial areas, and Metrorail stations new Capital Bikeshare stations in Arlington and Falls Church.

Carpool

- > I-66 Corridor Specific Startup Carpool Incentives
- > Rideshare Program Operation Support
- > Carsharing at Priority Bus Activity Nodes
- > Dynamic Ridesharing

Vanpool

- > Vanpool Driver Incentive
- > Enhanced Virginia Vanpool Insurance Pool
- > Capital Assistance for Vanpools
- > Flexible Vanpool Network
- > Van Priority Access

Multimodal Package 1

- > Converts I-66 into an electronically tolled Bus/HOV/high occupancy toll (HOT) roadway.
 - ∴ SOV and HOV 2 vehicles would be tolled
 - ∴ Bus/HOV 3+ vehicles would not be tolled
 - ∴ Applies to all lanes in both directions 24/7



- > Several planned enhancements to local, commuter, and regional bus services including route changes and additions. Many of the increases in bus service feed rail stations in the corridor.
- > New and enhanced Priority Bus services with 10-minute peak period frequency.
 - ∴ I-66, U.S. 29, and U.S. 50

10-minute service frequency represents an enhancement over I-66 Transit/TDM Study service levels.

Key Finding: This package adds no additional physical lane capacity, maintaining the present configuration of I-66. It does apply a pricing strategy to permit SOV and HOV 2 users. Congested automobile usage decreases as a percentage of total automobile usage. However, in total there is a slight increase in automobile usage for both the morning and evening peak periods. Transit usage levels remain generally unchanged.

Multimodal Package 2

- > Converts I-66 into an electronically tolled Bus/HOV/HOT roadway and adds a lane in each direction.
 - ∴ SOV and HOV 2 vehicles would be tolled
 - ∴ Bus/HOV 3+ vehicles would not be tolled
 - ∴ Applies to all lanes in both directions 24/7



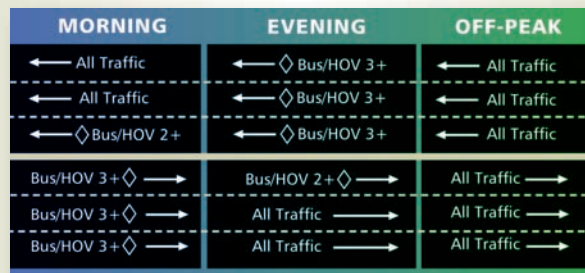
- > Several planned enhancements to local, commuter, and regional bus services including route changes and additions. Many of the increases in bus service feed rail stations in the corridor.
- > New and enhanced Priority Bus services with 10-minute peak period frequency.
 - ∴ I-66, U.S. 29, and U.S. 50

10-minute service frequency represents an enhancement over I-66 Transit/TDM Study service levels.

Key Finding: This package adds lane capacity and applies a pricing strategy as in Package 1. It results in the lowest proportion of congested automobile usage among the packages for the study area. However, the added lane capacity produces the highest automobile usage for the study area. The additional transit service helps maintain the mode share, with only a slight reduction in transit mode share for work trips with destinations in the study area.

Multimodal Package 3

- > An additional lane is added in both directions.
 - ∴ In the peak direction, all lanes are Bus/HOV 3+ only during peak hours.
 - ∴ In the reverse-peak direction, one lane is Bus/HOV 2+ during peak hours, and the rest are general purpose lanes.
 - ∴ In off-peak periods all lanes are open to all traffic.



- > Several bus planned enhancements to local, commuter, and regional bus services including bus route changes and additions.
- > Enhanced U.S. 50 bus service with new routes from Tysons and Fair Oaks continuing on U.S. 50 into the D.C. Core using an added bus-only shoulder lane on U.S. 50.
- > New and enhanced Priority Bus services with 10-minute peak period frequency.
 - ∴ I-66, U.S. 29, and U.S. 50

10-minute service frequency represents an enhancement over I-66 Transit/TDM Study service levels.

Key Finding: This package adds lane capacity and provides a Bus/HOV 2+ only lane in the reverse peak direction. There is a slight increase in HOV 2 usage but HOV 3+ usage does not increase. Multimodal mobility increases during the off-peak periods, when the added lane on I-66 is open to all traffic, not during the peak commuter periods due to the HOV 3+ requirement. This package improves travel times for HOV and transit.

Multimodal Package 4

- > Increased transit service for all routes entering the study area.
 - ∴ This included increased frequency on local, commuter, and regional bus services.
 - ∴ Headway on individual routes that were not part of trunk line services were set at a minimum of 15 minutes in the peak and 30 minutes in the off-peak.
 - ∴ Trunk line routes were set for a combined headway of 15 minutes in the peak and 30 minutes in the off-peak.
- > Enhanced U.S. 50 bus service with new routes from Tysons and Fair Oaks continuing on U.S. 50 into the D.C. Core using an added bus-only shoulder lane on U.S. 50.
- > New and enhanced Priority Bus services with 10-minute peak period frequency.
 - ∴ I-66, U.S. 29, and U.S. 50

10-minute service frequency represents an enhancement over I-66 Transit/TDM Study service levels.



Key Finding: This package focused on enhancing transit service throughout the study area. It had the highest number of commuters using transit and the lowest number using single occupant automobiles. It produces slight decreases in overall vehicle travel (VMT) and congested VMT.

Sensitivity Tests

All four packages were evaluated to see how they would reduce congestion and improve mobility in the corridor. In two instances, package assumptions were modified to see how the performance of packages would change. This process is called a sensitivity analysis or test.

Test 1 - Modified Package 1: In the original Package 1, the lanes on I-66 are converted to HOT Lanes at all times (24/7). The sensitivity test keeps the HOT lanes in both directions during peak periods only.

Key Finding: This sensitivity test showed that tolling in only the peak periods also helped address the study goals. The congestion in the peak periods was reduced similar to Package 1. During off-peak periods usage remained similar to the year 2040 baseline and was higher than in Package 1.

Test 2 - Modified Package 3: In the original Package 3, a lane is added to I-66 in both directions. The sensitivity test changes the additional lane to a HOT lane, which would be

tolled at all times (24/7) in both directions.

Key Finding: The sensitivity test showed the impacts of a new lane being tolled. The price for the toll had to be relatively high due to the high demand and limited supply. In the peak direction, more volume is present in the tolled lane than in the adjacent free Bus/HOV 3+ lanes. In general, this configuration offers more mobility benefits than the original Package 3.

HOW TO STAY INFORMED AND INVOLVED

Stay informed by visiting www.i66multimodalstudy.com where you can learn more about the study and key milestones, find contact information, and view and download study documents, including the public meeting presentation and presentation boards, market research, comment form, map of the study area, Fact Sheets, and Interim Report.

If you are interested in commenting by phone and/or email, please contact us at info@i66multimodalstudy.com or 855 STUDY66 (788-3966)



Next Steps

Each Multimodal Package has meritorious aspects as well as unique issues. To fully evaluate the benefits and challenges of each one, a recommendations framework has been developed. The framework assesses package performance against the study goals and objectives. The

recommendations framework will help synthesize the the various technical analyses and incorporate feedback from stakeholders and the public into a useful guide to potential future investment in the I-66 corridor to improve mobility and reduce congestion.

Schedule /Key Milestones

TASK	Apr	May	Jun
Finalize Work Plan	✓		
Identify Key Corridor Transportation Issues and Needs	✓		
Develop Option Elements to Address Congestion, Reliability, and Mobility	✓		
Commuter Survey to Solicit Feedback on Critical Issues and Needs	✓		
Interviews with Elected Officials and Transportation Stakeholders	✓		
Analyze and Evaluate Mobility Options to Develop Multimodal Packages	✓		
Analyze and Evaluate Multimodal Packages		In progress	
Develop Recommendations for Enhanced Mobility on I-66		In progress	
Public Meetings		Public Meetings	
Interim and Final Reports			Report Delivered
Public Meetings Report Delivered In progress Complete			